

REMARKS

Claims 2-6, 8, 9, 11-24 and 27 are currently pending in the present application. Claims 5, 6, 8, 9, 16 and 17 are withdrawn from consideration. Claims 2, 12, 15 and 27 have been amended herein. Support for the present claim amendments may be found in the specification, at least, at page 15, lines 2-3, as #C-490P in Example 5.

Rejections under 35 U.S.C. § 103 – Obviousness¹

Claims 2-4, 11-15 and 19-24 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sato in view of Lyon and Tateno.

Claim 27 stands rejected under 35 U.S.C. § 103 as being unpatentable over Sato in view of Lyon and Tateno, and further in view of Kishi.

Claims 2-4, 11-15 and 19-24 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sato in view of USP 6,123,790 of Lundstrom et al. (hereinafter “Lundstrom”) and Tateno.

In order to further distinguish the present invention from the cited prior art, Applicants have amended the claims to recite “***phosphate glass comprising P_2O_5 , Al_2O_3 , Na_2O and K_2O* ” (emphasis added), which is taught in the present specification at page 15, lines 2-3, as #C-490P in Example 5.**

Applicants respectfully submit that the limited phosphate glass has a low softening point and thus, the present invention achieves advantageous slag-forming ability. Lyon and Lundstrom only disclose glass, but do not specify phosphate glass, or anything regarding the composition of the glass. Thus, by limiting the present invention in the present manner, it is clear that Lyon and Lundstrom do not teach or suggest the presently claimed invention.

Further, Tatano does not disclose the specific phosphate glass of the present invention. Finally, the Examiner correctly acknowledges that Sato does not disclose the use of glass.

With regard to the claim limitation reciting that the phosphate glass has “softening point is 550°C or less”, the Examiner has taken the position that it would have been obvious to optimize the disclosures of the cited prior art references in order to arrive at the presently claimed invention, and also that “550°C” is considered to be “approximately 590°C. See the Office Action, page 3, lines 12-18.

In accordance to MPEP § 2173.05(b), in determining the range encompassed by the term “about”, one must consider the context of the term as it is used in the specification and claims of the application. *Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd.*, 476 F.3d 1321, 1326, 81 USPQ2d 1427, 1432 (Fed. Cir. 2007). In this instance, Lyon clearly discloses that the softening point of the phosphate glass is “over approximately 590°C”. This clearly teaches away from the presently claimed invention.

Thus, Applicants respectfully submit that the outstanding rejections are improper because the Examiner has not considered a key element of the Lyon disclosure (i.e. “over approximately 590°C”) in making the determination that the claimed softening point range is embraced by the prior art.

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) (emphasis in original). A *prima facie* case of obviousness may be rebutted by showing that the art, in any material respect, teaches away from the claimed invention. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997). It is improper to combine references where the

¹ In the Office Action, at page 5, rejection (6.), the rejection is the same as rejection (4.), beginning at page 3.

references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

Here, as discussed above, the Lyon reference teaches away from the present invention in a material respect. Moreover, while the Tateno reference may disclose that the softening point of phosphate glass encompasses a broad range (i.e., 400-800 °C), this does not negate the teaching of Lyon. One of ordinary skill considering the proposed combination of cited prior art would not arrive at the presently claimed invention, absent the benefit of hindsight reconstruction, which is not permitted. Thus, in light of the noted distinction between the phosphate glass of the present invention and that of the cited prior art, the proposed combination of prior art cannot be combined to arrive at the present claimed invention.

A suggestion or motivation to combine references is an appropriate method for determining obviousness, however it is just one of a number of valid rationales for doing so. The Court in *KSR* identified several exemplary rationales to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in *Graham*. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007).

As the M.P.E.P. directs, all claim limitations must be considered in view of the cited prior art in order to establish a *prima facie* case of obviousness. See MPEP § 2143.03.

MPEP § 2143.03 recites examples of basic requirements of a *prima facie* case of obviousness and seven exemplary rationales: (A) Combining prior art elements according to known methods to yield predictable results; (B) Simple substitution of one known element for another to obtain predictable results; (C) Use of known technique to improve similar devices (methods or products) in the same way; (D) Applying a known technique to a known device (method or product) ready for improvement to yield predictable results; (E) "Obvious to try"; (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are

predictable to one of ordinary skill in the art; and (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Applicants respectfully submit that the Examiner has not met the basic requirements of establishing a *prima facie* case of obviousness. More specifically, Applicants contend that none of the rationale (A) – (G) above is applicable in the present application.

Accordingly, Applicants respectfully request that each of the outstanding rejections be withdrawn.

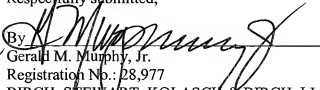
In view of the foregoing, Applicants believe the pending application is in condition for allowance. A Notice of Allowance is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Monique T. Cole, Reg. No. 60,154 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 
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